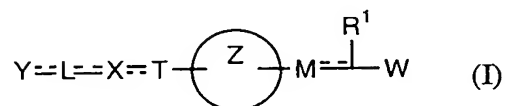


## Claims

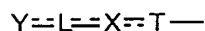
1. A carboxylic acid compound represented by the following formula, a salt thereof, an ester thereof or a hydrate of them.



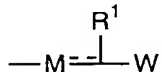
In the formula,  $R^1$  represents hydrogen atom, hydroxyl group or a  $C_{1-6}$  alkyl group,  $C_{1-6}$  alkoxy group,  $C_{1-6}$  alkylthio group,  $C_{1-6}$  hydroxyalkyl group,  $C_{1-6}$  hydroxyalkoxy group,  $C_{1-6}$  hydroxyalkylthio group,  $C_{1-6}$  aminoalkyl group,  $C_{1-6}$  aminoalkoxy group,  $C_{1-6}$  aminoalkylthio group,  $C_{1-6}$  halogenated alkyl group,  $C_{1-6}$  halogenated alkoxy group,  $C_{1-6}$  halogenated alkylthio group,  $C_{2-12}$  alkoxyalkyl group,  $C_{2-12}$  alkoxyalkoxy group,  $C_{2-12}$  alkoxyalkylthio group,  $C_{3-7}$  cycloalkyl group,  $C_{3-7}$  cycloalkyloxy group,  $C_{3-7}$  cycloalkylthio group,  $C_{2-6}$  alkenyl group,  $C_{2-6}$  alkenyloxy group,  $C_{2-6}$  alkenylthio group,  $C_{2-6}$  alkynyl group,  $C_{2-6}$  alkynyloxy group,  $C_{2-6}$  alkynylthio group,  $C_{6-12}$  aryl group,  $C_{6-12}$  aryloxy group,  $C_{6-12}$  arylthio group,  $C_{7-18}$  alkylaryl group,  $C_{7-18}$  alkylaryloxy group,  $C_{7-18}$  alkylarylthio group,  $C_{7-18}$  aralkyl group,  $C_{7-18}$  aralkyloxy group or  $C_{7-18}$  aralkylthio group, each of which may have one or more substituents; L represents a single or double bond or a  $C_{1-6}$  alkylene group,  $C_{2-6}$  alkenylene group or  $C_{2-6}$  alkynylene group, each of which may have one or more substituents; M represents a single bond or a  $C_{1-6}$  alkylene group,  $C_{2-6}$  alkenylene group or  $C_{2-6}$  alkynylene group, each of which may

have one or more substituents; T represents a single bond or a C<sub>1-3</sub> alkylene group, C<sub>2-3</sub> alkenylene group or C<sub>2-3</sub> alkynylene group, each of which may have one or more substituents; W represents 2,4-dioxothiazolidine-5-yl group, 2,4-dioxothiazolidine-5-ylidene group, carboxyl group or a group represented by the formula -CON(R<sup>w1</sup>)R<sup>w2</sup> (wherein R<sup>w1</sup> and R<sup>w2</sup> are the same as or different from each other and each represents hydrogen atom, formyl group or a C<sub>1-6</sub> alkyl group, C<sub>2-7</sub> aliphatic acyl group or C<sub>7-19</sub> aromatic acyl group, each of which may have one or more substituents), provided that the case where T is a single bond and W is 2,4-dioxothiazolidine-5-yl group or 2,4-dioxothiazolidine-5-ylidene group in the above definition is excluded;  $\text{---}$  represents a single or double bond; X represents oxygen atom, a C<sub>2-6</sub> alkenylene group which may have one or more substituents, hydroxymethylene group or a group represented by the formula -CQ- (wherein Q represents oxygen atom or sulfur atom), -CQNR<sup>x</sup>- (wherein Q represents the same group as defined above, and R<sup>x</sup> represents hydrogen atom, formyl group or a C<sub>1-6</sub> alkyl group, C<sub>2-7</sub> aliphatic acyl group or C<sub>7-19</sub> aromatic acyl group, each of which may have one or more substituents), -NR<sup>x</sup>CQ- (wherein Q and R<sup>x</sup> each represent the same group as defined above), -SO<sub>2</sub>NR<sup>x</sup>- (wherein R<sup>x</sup> represents the same group as defined above), -NR<sup>x</sup>SO<sub>2</sub>- (wherein R<sup>x</sup> represents the same group as defined above) or -NR<sup>x1</sup>CQNR<sup>x2</sup>- (wherein Q represents the same group as defined above, and R<sup>x1</sup> and R<sup>x2</sup> are the same as or different from each other and each represents hydrogen

atom, formyl group or a C<sub>1-6</sub> alkyl group, C<sub>2-7</sub> aliphatic acyl group or C<sub>7-19</sub> aromatic acyl group, each of which may have one or more substituents), provided that the case where T is a single bond and X is oxygen atom in the above definition is excluded; Y represents a C<sub>5-12</sub> aromatic hydrocarbon group or C<sub>3-7</sub> alicyclic hydrocarbon group which may have one or more substituents and which may have one or more heteroatoms; ring Z represents a C<sub>5-6</sub> aromatic hydrocarbon group which may have 0 to 4 substituents and which may have one or more hetero atoms; and a group represented by the formula:



(wherein each symbol has the same meaning as defined above) and a group represented by the formula:



(wherein each symbol has the same meaning as defined above) are bound to each other via 3 atoms on ring Z.

2. The carboxylic acid compound according to claim 1, a salt thereof, an ester thereof or a hydrate of them, wherein in the formula (I), W is a carboxylic acid.

3. The carboxylic acid compound according to claim 1 or 2, a salt thereof, an ester thereof or a hydrate of them, wherein in the formula (I), R<sup>1</sup> is a C<sub>1-6</sub> alkyl group or C<sub>1-6</sub> alkoxy group which may have one or more substituents.

4. The carboxylic acid compound according to claim 1 or 2, a salt thereof, an ester thereof or a hydrate of them, wherein

in the formula (I), ring Z is a benzene ring which may further have 0 to 4 substituents.

5. The carboxylic acid compound according to claim 1 or 2, a salt thereof, an ester thereof or a hydrate of them, wherein in the formula (I), X is a group represented by the formula  $-CQNR^x-$  (wherein Q and  $R^x$  represent the same group as defined above) or  $-NR^xCQ-$  (wherein Q and  $R^x$  represent the same group as defined above).

6. The carboxylic acid compound according to claim 1 or 2, a salt thereof, an ester thereof or a hydrate of them, wherein in the formula (I), Y is a  $C_{5-12}$  aromatic hydrocarbon group which may have one or more substituents.

7. The carboxylic acid compound according to claim 1 or 2, a salt thereof, an ester thereof or a hydrate of them, wherein in the formula (I), L or M is a  $C_{1-6}$  alkylene group.

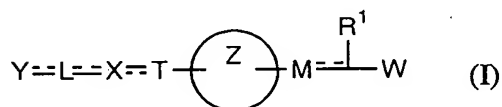
8. The carboxylic acid compound according to claim 1 or 2, a salt thereof, an ester thereof or a hydrate of them, wherein in the formula (I), T is a  $C_{1-3}$  alkylene group.

9. The carboxylic acid compound according to claim 1 or 2, a salt thereof, an ester thereof or a hydrate of them, wherein in the formula (I),  $R^1$  is a  $C_{1-6}$  alkyl group or  $C_{1-6}$  alkoxy group which may have one or more substituents; and ring Z is a benzene ring which may further have 0 to 4 substituents.

10. The carboxylic acid compound according to claim 1 or 9, a salt thereof, an ester thereof or a hydrate of them, wherein in the formula (I), X is a group represented by the formula

-CQNR<sup>\*</sup>- (wherein Q and R<sup>\*</sup> represent the same group as defined above) or -NR<sup>\*</sup>CQ- (wherein Q and R<sup>\*</sup> represent the same group as defined above); and Y is a C<sub>5-12</sub> aromatic hydrocarbon group which may have one or more substituents.

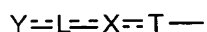
11. A medicament comprising a carboxylic acid compound represented by the following formula, a salt thereof, an ester thereof or a hydrate of them.



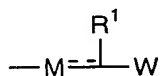
In the formula, R<sup>1</sup> represents hydrogen atom, hydroxyl group or a C<sub>1-6</sub> alkyl group, C<sub>1-6</sub> alkoxy group, C<sub>1-6</sub> alkylthio group, C<sub>1-6</sub> hydroxyalkyl group, C<sub>1-6</sub> hydroxyalkoxy group, C<sub>1-6</sub> hydroxyalkylthio group, C<sub>1-6</sub> aminoalkyl group, C<sub>1-6</sub> aminoalkoxy group, C<sub>1-6</sub> aminoalkylthio group, C<sub>1-6</sub> halogenated alkyl group, C<sub>1-6</sub> halogenated alkoxy group, C<sub>1-6</sub> halogenated alkylthio group, C<sub>2-12</sub> alkoxyalkyl group, C<sub>2-12</sub> alkoxyalkoxy group, C<sub>2-12</sub> alkoxyalkylthio group, C<sub>3-7</sub> cycloalkyl group, C<sub>3-7</sub> cycloalkyloxy group, C<sub>3-7</sub> cycloalkylthio group, C<sub>2-6</sub> alkenyl group, C<sub>2-6</sub> alkenyloxy group, C<sub>2-6</sub> alkenylthio group, C<sub>2-6</sub> alkynyl group, C<sub>2-6</sub> alkynyloxy group, C<sub>2-6</sub> alkynylthio group, C<sub>6-12</sub> aryl group, C<sub>6-12</sub> aryloxy group, C<sub>6-12</sub> arylthio group, C<sub>7-18</sub> alkylaryl group, C<sub>7-18</sub> alkylaryloxy group, C<sub>7-18</sub> alkylarylthio group, C<sub>7-18</sub> aralkyl group, C<sub>7-18</sub> aralkyloxy group or C<sub>7-18</sub> aralkylthio group, each of which may have one or more substituents; L represents a single or double bond or a C<sub>1-6</sub> alkylene group, C<sub>2-6</sub> alkenylene group or C<sub>2-6</sub> alkynylene group, each of which may have one or more

substituents; M represents a single bond or a C<sub>1-6</sub> alkylene group, C<sub>2-6</sub> alkenylene group or C<sub>2-6</sub> alkynylene group, each of which may have one or more substituents; T represents a single bond or a C<sub>1-3</sub> alkylene group, C<sub>2-3</sub> alkenylene group or C<sub>2-3</sub> alkynylene group, each of which may have one or more substituents; W represents 2,4-dioxothiazolidine-5-yl group, 2,4-dioxothiazolidine-5-ylidene group, carboxyl group or a group represented by the formula -CON(R<sup>w1</sup>)R<sup>w2</sup> (wherein R<sup>w1</sup> and R<sup>w2</sup> are the same as or different from each other and each represents hydrogen atom, formyl group or a C<sub>1-6</sub> alkyl group, C<sub>2-7</sub> aliphatic acyl group or C<sub>7-19</sub> aromatic acyl group, each of which may have one or more substituents), provided that the case where T is a single bond and W is 2,4-dioxothiazolidine-5-yl group or 2,4-dioxothiazolidine-5-ylidene group in the above definition is excluded;  $\equiv$  represents a single or double bond; X represents oxygen atom, a C<sub>2-6</sub> alkenylene group which may have one or more substituents, hydroxymethylene group or a group represented by the formula -CQ- (wherein Q represents oxygen atom or sulfur atom), -CQNR<sup>x</sup>- (wherein Q represents the same group as defined above, R<sup>x</sup> represents hydrogen atom, formyl group or a C<sub>1-6</sub> alkyl group, C<sub>2-7</sub> aliphatic acyl group or C<sub>7-19</sub> aromatic acyl group, each of which may have one or more substituents), -NR<sup>x</sup>CQ- (wherein Q and R<sup>x</sup> each represent the same group as defined above), -SO<sub>2</sub>NR<sup>x</sup>- (wherein R<sup>x</sup> represents the same group as defined above), -NR<sup>x</sup>SO<sub>2</sub>- (wherein R<sup>x</sup> represents the same group as defined above) or -NR<sup>x1</sup>CQNR<sup>x2</sup>- (wherein Q represents

the same group as defined above; and  $R^{x1}$  and  $R^{x2}$  are the same as or different from each other and each represents hydrogen atom, formyl group or a  $C_{1-6}$  alkyl group,  $C_{2-7}$  aliphatic acyl group or  $C_{7-19}$  aromatic acyl group, each of which may have one or more substituents), provided that the case where T is a single bond and X is oxygen atom in the above definition is excluded; Y represents a  $C_{5-12}$  aromatic hydrocarbon group or  $C_{3-7}$  alicyclic hydrocarbon group which may have one or more substituents and which may have one or more heteroatoms; ring Z represents a  $C_{5-6}$  aromatic hydrocarbon group which may further have 0 to 4 substituents and which may have one or more heteroatoms; and a group represented by the formula:



(wherein each symbol has the same meaning as defined above) and a group represented by the formula:



(wherein each symbol has the same meaning as defined above) are bound to each other via 3 atoms on ring Z.

12. The medicament according to claim 11, which is a medicament based on PPAR  $\alpha$  and  $\gamma$  dual agonism.

13. The medicament according to claim 11, which is a medicament based on PPAR  $\alpha$ ,  $\beta$  and  $\gamma$  triple agonism.

14. The medicament according to claims 11 to 13, which is an insulin-resistant improver.

15. The medicament according to claims 11 to 13, which

is an agent for preventing or treating diabetes mellitus.

16. The medicament according to claims 11 to 13, which is an agent for preventing or treating X syndromes.

17. A method for preventing, treating or ameliorating diseases against which PPAR  $\alpha$  and  $\gamma$  dual agonism or PPAR  $\alpha$ ,  $\beta$  and  $\gamma$  triple agonism is efficacious, by administering a pharmacologically effective amount of the compound according to claim 1, a salt thereof, an ester thereof or a hydrate of them to a patient.

18. Use of the compound according to claim 1, a salt thereof, an ester thereof or a hydrate of them, for producing an agent for preventing, treating or ameliorating diseases against which PPAR  $\alpha$  and  $\gamma$  dual agonism or PPAR  $\alpha$ ,  $\beta$  and  $\gamma$  triple agonism is efficacious.